**3/6/2006 2:22:06 PM**

**[File 342] Derwent Patents Citation Indx 1978-05/200607**

s pn=us 6331777

**S1** 1 S PN=US 6331777

**map pn/ct=**

SearchSave "SC338" stored
1 Select Statement, 4 Search Term(s)
SearchSave SC338

1 SearchSave(s), 4 Search Term(s)

**map pn**

SearchSave "SC339" stored
1 Select Statement, 13 Search Term(s)
SearchSave SC339

1 SearchSave(s), 13 Search Term(s)

**[File 344] Chinese Patents Abs Jan 1985-2006/Jan**
**[File 347] JAPIO Nov 1976-2005/Sep(Updated 060103)**
**[File 350] Derwent WPIX 1963-2006/UD,UM &UP=200607**

| Set | Items | Description |
|---|---|---|
| S1 | 5 | PN=AU 2003230111 + PN=EP 1082690 + PN=EP 1472978 + PN=EP 1506427 + PN=JP 2002540870 + PN=JP 2003225223 + PN=US 2003216634 + PN=US 6424153 + PN=US 6584338 + PN=US 6859203 + PN=WO 200060520 + PN=WO 200363702 + PN=WO 200398253 |
| S2 | 2 | S S1 AND PY<=2002 |

3/6/2006 2:40:43 PM

**[File 34] SciSearch(R) Cited Ref Sci 1990-2006/Jan W4**
**[File 434] SciSearch(R) Cited Ref Sci 1974-1989/Dec**

| Set | Items | Description |
|---|---|---|
| **S1** | 264 | CR='BOTNAR RM, 1998, P23, ISMRM 6 ANN M SYDN I':CR='BOTNAR RM, 1998, P23, P 6 M INT SOC MAGN R' OR CR='BOTNAR RM, 1999, IN PRESS CIRCULATION':CR='BOTNAR RM, 2001, V9, P77, CARDIOL REV' |
| **S2** | 51 | CR='SPUENTRUP E, IN PRESS RADIOLOGY':CR='SPUENTRUP E, 2000, V104, PE101, CIRCULATION' OR CR='SPUENTRUP E, 2001, P49, SOC CARDIOVASCULAR M':CR='SPUENTRUP E, 2001, V9, P306, P INT SOC MAG RES' |
| **S3** | 64 | S CR=STUBER M, 2001 |
| **S4** | 327 | S S1:S3 |
| **S5** | 147 | S S4 AND PY<=2002 |
| **S6** | 23 | S S5 AND ((NAVIGAT???? OR IMAG????)(3N)(PREPAR?????? OR SEQUENC??????? OR SIGNAL????)) |
| **S7** | 14 | S S6 AND (MRA? ? OR MAGNETIC()RESONANCE()ANGIOGRAPHY) |
| **S8** | 3 | S S7 AND (T2 OR T()2 OR WEIGHT????(3N)IMAG?????) |
| **S9** | 11 | S S7 NOT S8 |

9/9/4 (Item 4 from file: 34) **Links**
Fulltext available through: John Wiley and Sons USPTO Full Text Retrieval Options
SciSearch(R) Cited Ref Sci

10539184 **Genuine Article#:** 537KT **Number of References:** 15

**The impact of navigator timing parameters and navigator spatial resolution on 3D coronary magnetic resonance angiography**

**Author:** Spuentrup E (REPRINT) ; Stuber M; Botnar RM; Manning WJ
**Corporate Source:** Rhein Westfal TH Aachen,Dept Diagnost Radiol,Pauwelsstr 30/D-52057 Aachen//Germany/ (REPRINT); Beth Israel Deaconess Med Ctr,Dept Med, Div Cardiovasc,Boston//MA/02215
**Journal:** JOURNAL OF MAGNETIC RESONANCE IMAGING , **2001** , V 14 , N3 ( SEP ) , P 311-318
**ISSN:** 1053-1807 **Publication date:** 20010900
**Publisher:** JOHN WILEY & SONS INC , 605 THIRD AVE, NEW YORK, NY 10158-0012 USA
**Language:** English **Document Type:** ARTICLE
**Geographic Location:** Germany; USA
**Journal Subject Category:** RADIOLOGY, NUCLEAR MEDICINE & MEDICAL IMAGING
**Abstract:** The impact of navigator spatial resolution and navigator evaluation time on image quality in free-breathing navigator-gated 3D coronary **magnetic resonance angiography** (**MRA**], including real-time motion correction, was investigated in a moving phantom. Objective **image** quality parameters **signal**-to-noise ratio (SNR) and vessel sharpness were compared. It was found that for improved image quality a short navigator evaluation time is of crucial importance. Navigator spatial resolution showed minimal influence on image quality. J. Magn. Reson. Imaging 2001;14: 311-318. (C) 2001 Wiley-Liss, Inc.
**Descriptors--**Author Keywords: magnetic resonance (MR) ; coronary vessel ; motion study ; coronary angiography ; coronary artery disease
**Identifiers--** KeyWord Plus(R): MR-ANGIOGRAPHY; DEFINITION; LOCATIONS; POSITION; MOTION; HEART
**Cited References:**
**BOTNAR RM,** 1999, V99, P3139, CIRCULATION

9/9/5 (Item 5 from file: 34) **Links**
Fulltext available through: John Wiley and Sons USPTO Full Text Retrieval Options
SciSearch(R) Cited Ref Sci

10515953 **Genuine Article#:** 537KU **Number of References:** 18
**Accelerated coronary MRA by simultaneous acquisition of multiple 3D stacks**

**Author:** Manke D (REPRINT) ; Bornert P; Nehrke K; Nagel E; Dossel O
**Corporate Source:** Philips Res Labs,Div Tech Syst,Roentgenstr 24-26/D-22335 Hamburg//Germany/ (REPRINT); Univ Karlsruhe,Inst Biomed Engn,Karlsruhe//Germany/
**Journal:** JOURNAL OF MAGNETIC RESONANCE IMAGING , **2001** , V 14 , N4 ( OCT ) , P 478-483
**ISSN:** 1053-1807 **Publication date:** 20011000
**Publisher:** JOHN WILEY & SONS INC , 605 THIRD AVE, NEW YORK, NY 10158-0012 USA
**Language:** English **Document Type:** ARTICLE
**Geographic Location:** Germany
**Journal Subject Category:** RADIOLOGY, NUCLEAR MEDICINE & MEDICAL IMAGING
**Abstract:** The implementation and first in vivo results of a novel coronary **magnetic resonance angiography** (**MRA**) protocol allowing simultaneous acquisition of multiple geometrically independent 3D imaging stacks are presented. Each imaging stack is acquired in a separate cardiac phase using an individual magnetization **preparation** and **navigator**-based gating and prospective motion correction. Each stack covers one of the main coronary vessels. Thus, an improvement of scan efficiency was achieved, which was used in this study to reduce total scan time at standard image quality. Experiments performed in healthy volunteers and in patients using a two-stack approach yielded a total scan time reduction of 50% with an image quality equivalent to standard single-stack coronary **MRA**. J. Magn. Reson. Imaging 2001;14:478-483. (C) 2001 Wiley-Liss, Inc.
**Descriptors--**Author Keywords: MRI ; coronary **MRA** ; multistack ; scan efficiency ; 3D ; coronary angiography
**Identifiers--** KeyWord Plus(R): BREATH-HOLD; ANGIOGRAPHY; ARTERIES; MOTION; RESOLUTION; CONTRAST
**Cited References:**
**BOTNAR RM,** 1999, V99, P3139, CIRCULATION

9/9/9 (Item 9 from file: 34) Links

Fulltext available through: USPTO Full Text Retrieval Options



10263713 **Genuine Article#:** 506EU **Number of References:** 12

**Impact of navigator timing on free-breathing submillimeter 3D coronary magnetic resonance angiography**

**Author:** Spuentrup E; Manning WJ; Botnar RM; Kissinger KV; Stuber M (REPRINT)
**Corporate Source:** Beth Israel Deaconess Med Ctr,Dept Med, Div Cardiovasc,330 Brookline Ave/Boston//MA/02215 (REPRINT); Beth Israel Deaconess Med Ctr,Dept Med, Div Cardiovasc,Boston//MA/02215; Harvard Univ,Sch Med,Boston//MA/; Rhein Westfal TH Aachen,Dept Diagnost Radiol,Aachen//Germany/; Beth Israel Deaconess Med Ctr,Dept Radiol,Boston//MA/02215; Phillips Med Syst,Best//Netherlands/

**Journal:** MAGNETIC RESONANCE IN MEDICINE , **2002** , V 47 , N1 ( JAN ) , P 196-201
**ISSN:** 0740-3194 **Publication date:** 20020100
**Publisher:** JOHN WILEY & SONS INC , 605 THIRD AVE, NEW YORK, NY 10158-0012 USA
**Language:** English **Document Type:** ARTICLE
**Geographic Location:** USA; Germany; Netherlands
**Journal Subject Category:** RADIOLOGY, NUCLEAR MEDICINE & MEDICAL IMAGING

**Abstract:** The purpose of this study was to investigate the impact of navigator timing on image quality in navigator-gated and realtime motion-corrected, free-breathing, three-dimensional (3D) coronary MR angiography (**MRA**) with submillimeter spatial image resolution. Both phantom and in vivo investigations were performed. 3D coronary **MRA** with real-time navigator technology was applied using variable navigator time delays (time delay between the **navigator** and **imaging sequences**) and varying spatial resolutions. Quantitative objective and subjective image quality parameters were assessed. For high-resolution imaging, reduced image quality was found as a function of increasing navigator time delay. Lower spatial resolution coronary **MRA** showed only minor sensitivity to navigator timing. These findings were consistent among volunteers and phantom experiments. In conclusion, for submillimeter navigator-gated and real-time motion-corrected 3D coronary **MRA**, shortening the time delay between the navigator and the **imaging** portion of the **sequence** becomes increasingly important for improved spatial resolution. Magn Reson Med 47:196-201, 2002. (C) 2002 Wiley-Liss, Inc.

**Descriptors--**Author Keywords: coronary vessels, MR ; magnetic resonance, motion correction ; magnetic resonance, vascular studies ; coronary angiography ; coronary artery disease
**Identifiers--** KeyWord Plus(R): MR-ANGIOGRAPHY; CARDIAC MOTION; DEFINITION; RESOLUTION; LOCATIONS; ARTERIES; HEART

**Cited References:**

**BOTNAR RM,** 1999, V99, P3139, CIRCULATION

9/9/11 (Item 11 from file: 34) **Links**
Fulltext available through: John Wiley and Sons USPTO Full Text Retrieval Options
SciSearch(R) Cited Ref Sci

08737139 **Genuine Article#:** 323NP **Number of References:** 25
**A fast 3D approach for coronary MRA**

**Author:** Botnar RM (REPRINT) ; Stuber M; Danias PG; Kissinger KV; Manning WJ
**Corporate Source:** BETH ISRAEL DEACONESS MED CTR,DIV CARDIOVASC, CARDIAC MR CTR, DEPT MED, 330 BROOKLINE AVE/BOSTON//MA/02215 (REPRINT)
**Journal:** JMRI-JOURNAL OF MAGNETIC RESONANCE IMAGING , **1999** , V 10 , N5 ( NOV ) , P 821-825
**ISSN:** 1053-1807 **Publication date:** 19991100
**Publisher:** JOHN WILEY & SONS INC , 605 THIRD AVE, NEW YORK, NY 10158-0012
**Language:** English **Document Type:** ARTICLE
**Geographic Location:** USA
**Subfile:** CC CLIN--Current Contents, Clinical Medicine
**Journal Subject Category:** RADIOLOGY, NUCLEAR MEDICINE & MEDICAL IMAGING
**Abstract:** Two-dimensional (2D)-breathhold coronary **magnetic resonance angiography** (**MRA**) has been shown to be a fast and reliable method to depict the proximal coronary arteries. Recent developments, however, allow for free-breathing navigator gated and navigator corrected three-dimensional (3D) coronary **MRA**. These 3D approaches have potential for improved signal-to-noise ratio (SNR) and allow for the acquisition of adjacent thin slices without the misregistration problems known from 2D approaches. Still, a major impediment of a 3D acquisition is the increased scan time. The purpose of this study was the implementation of a free-breathing navigator gated and corrected ultra-fast 3D coronary **MRA** technique, which allows for scan times of less than 5 minutes, Twelve healthy adult subjects were examined in the supine position using a navigator gated and corrected ECG triggered ultra-fast 3D interleaved gradient echo planar **imaging sequence** (TFE-EPI). A 3D slab, consisting of 20 slices with a reconstructed slice thickness of 1.5 mm, was acquired with free-breathing. The diastolic TFE-EPI acquisition block was preceded by a T2prep pre-pulse, a diaphragmatic navigator pulse, and a fat suppression pre-pulse. With a TR of 19 ms and an effective TE of 5.4 ms, the duration of the data acquisition window duration was 38 ms. The in-plane spatial resolution was 1.0-1.3 mm*1.5-1.9 mm, In all cases, the entire left main (LM) and extensive portions of the left anterior descending (LAD) and right coronary artery (RCA) could be visualized with an average scan time for the entire 3D-volume data set of 2:57 +/- 0:51 minutes. Average contiguous vessel length visualized was 53 +/- 11 mm (range: 42 to 75 mm) for the LAD and 84 +/- 14 mm (range: 62 to 112 mm) for the RCA. Contrast-to-noise between coronary blood and myocardium was 5.0 +/- 2.3 for the LM/LAD and 8.0 +/- 2.9 for the RCA, resulting In an excellent suppression of myocardium. We present a new approach for free-breathing 3D coronary **MRA**, which allows for scan times superior to corresponding 2D coronary **MRA** approaches, and which takes advantage of the enhanced SNR of 3D acquisitions and the post-processing benefits of thin adjacent slices. The robust image quality and the short average scanning time suggest that this approach may be useful for screening the major coronary arteries or identification of anomalous coronary arteries. (C) 1999 Wiley-Liss, Inc.
**Descriptors--**Author Keywords: 3D Coronary **MRA** ; 2D coronary **MRA** ; rapid imaging ; navigator gating ; coronary angiography
**Identifiers--** KeyWord Plus(R): NAVIGATOR CORRECTION; ANGIOGRAPHY; ARTERIES; CONTRAST; POSITION; MOTION
**Cited References:**
**BOTNAR RM,** 1999, V99, P3139, CIRCULATION

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[File 2] INSPEC 1898-2006/Feb W3
[File 155] MEDLINE(R) 1951-2006/Feb 27
[File 5] Biosis Previews(R) 1969-2006/Feb W3
[File 6] NTIS 1964-2006/Feb W1
[File 8] Ei Compendex(R) 1970-2006/Feb W3
[File 73] EMBASE 1974-2006/Feb 27[File 94] JICST-EPlus 1985-2006/Dec W1
[File 94] JICST-EPlus 1985-2006/Dec W2
[File 95] TEME-Technology & Management 1989-2006/Feb W4
[File 35] Dissertation Abs Online 1861-2006/Feb
[File 144] Pascal 1973-2006/Feb W1
[File 99] Wilson Appl. Sci & Tech Abs 1983-2006/Jan
[File 34] SciSearch(R) Cited Ref Sci 1990-2006/Feb W3
[File 434] SciSearch(R) Cited Ref Sci 1974-1989/Dec
[File 65] Inside Conferences 1993-2006/Feb W4
[File 162] Global Health 1983-2006/Jan
[File 164] Allied & Complementary Medicine 1984-2006/Feb
[File 357] Derwent Biotech Res. _1982-2006/Feb W4
[File 23] CSA Technology Research Database 1963-2006/Feb
[File 60] ANTE: Abstracts in New Tech & Engineer 1966-2006/Feb
[File 294] ONTAP(R) SciSearch(R) Cited Ref Science
[File 256] TecInfoSource 82-2006/Feb (c) 2006 Info.Sources Inc
[File 987] TULSA (Petroleum Abs) 1965-2006/Feb W2
[File 105] AESIS 1851-2001/Jul
[File 103] Energy SciTec 1974-2006/Feb B2
[File 58] GeoArchive 1974-2005/Jun
[File 292] GEOBASE(TM) 1980-2006/Feb W4
[File 89] GeoRef 1785-2006/Feb B2
[File 239] Mathsci 1940-2006/Apr

| Set | Items | Description |
|---|---|---|
| S1 | 2347475 | S MAGNETIC(3N)RESONA????? OR MRI? ? OR MAGNETIC()RESONANCE()IMAG???? OR MR(3N)IMAG???? OR MAGNETIC(3N)IMAG???? OR NMR? ? OR NUCLEAR()MAGNETIC OR FTNMR? ? OR FTMRI? ? OR MAGNETORESONA???? OR PMR? ? OR PROTON()MAGNETIC()RESONA???? OR PARAMAGNETIC(3N)RESONA???? OR MAGNETIC(3N)RELAX????? OR FERROMAGNETIC(3N)RESONA???? OR MAGNETIC(3N)(SPECTRO???????) OR MRA? ? OR MAGNETIC()RESONANCE()ANGIOGRAPH???? |
| S2 | 3415416 | S (SPIN????()SPIN???? OR T2 OR T()2 OR TRANSVERS????? OR PREPAR?????? OR WEIGH?????)(3N)(SIGNAL??? OR SEQUENC?????? OR SERIES OR PULS?????? OR TRAIN????? OR IMAG???? OR PERIOD???? OR TIME OR TIMING OR PHAS???? OR CYCL???? OR FREQUENC???? OR CONTRAST????) OR CONTRAST?????(3N)(SIGNAL???? OR SEQUENC?????? OR SERIES OR PULS?????? OR TRAIN????? OR IMAG???? OR PERIOD???? OR TIME OR TIMING OR PHAS???? OR CYCL???? OR FREQUENC???? OR CONTRAST????) |
| S3 | 2911369 | S 2D OR 3D OR (TWO OR THREE)(3N)DIMENSION????? OR NAVIGAT?????(3N)(SIGNAL???? OR SEQUENC?????? OR SERIES OR PULS?????? OR TRAIN????? OR IMAG???? OR PERIOD???? OR TIME OR TIMING OR PHAS???? OR CYCL???? OR FREQUENC???? OR CONTRAST????) OR 2D()NAVIGAT???()RESTOR???()SEQUENCE??? OR RESTOR?????(3N)(SIGNAL???? OR SEQUENC?????? OR SERIES OR PULS?????? OR TRAIN????? OR IMAG???? OR PERIOD???? OR TIME OR TIMING OR PHAS???? OR CYCL???? OR FREQUENC???? OR CONTRAST????) |
| S4 | 4635773 | S IMAG????(3N)(SIGNAL???? OR SEQUENC?????? OR SERIES OR PULS?????? OR TRAIN????? OR IMAG???? OR PERIOD???? OR TIME OR TIMING OR PHAS???? OR CYCL???? OR FREQUENC???? OR CONTRAST????) OR TURBO(3N)(SIGNAL???? OR SEQUENC?????? OR SERIES OR PULS?????? OR TRAIN????? OR IMAG???? OR PERIOD???? OR TIME OR TIMING OR PHAS???? OR CYCL???? OR FREQUENC???? OR CONTRAST????) OR TFE? ? OR TFE()EPI |
| S5 | 225048 | S RELAX??????(3N)(SIGNAL???? OR SEQUENC?????? OR SERIES OR PULS?????? OR TRAIN????? OR IMAG???? OR PERIOD???? OR TIME OR TIMING OR PHAS???? OR CYCL???? OR FREQUENC???? OR CONTRAST????) |
| S6 | 38853 | S CC=(A3240 OR A3325 OR A7600 OR A0758 OR A8760I OR B7510N) |
| S7 | 841 | S S1 AND S2 AND S3 AND S4 AND S5 |
| S8 | 34 | S S7 AND S6 |
| S9 | 9 | S S7 AND ECG? ? |
| S10 | 4 | RD (unique items) |
| S11 | 4 | S S10 AND PY<=2002 |
| S12 | 131 | S S7 AND (HOMOGENOUS OR UNIFORM???? OR STEAD???? OR CONSTANT???) |

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|---|---|---|
| **S13** | 2 | S S12 AND ((MEASUR???? OR RECONSTRUCT???? OR REPAIR????)(3N)IMAG????) |
| **S14** | 25 | S S8 AND PY<=2002 |
| **S15** | 25 | RD (unique items) |
| **S16** | 3 | S S15 AND ((MEASUR???? OR RECONSTRUCT???? OR REPAIR????)(3N)IMAG????) |
| **S17** | 25498 | S S1 AND S2 AND S3 |
| **S18** | 977 | S S17 AND S6 |
| **S19** | 125 | S S18 AND ((MEASUR???? OR RECONSTRUCT???? OR REPAIR????)(3N)IMAG????) |
| **S20** | 33 | S S19 AND CONTRAST(3N)ENHANC????? |
| **S21** | 33 | RD (unique items) |
| **S22** | 22 | S S21 AND PY<=2002 |
| **S23** | 1 | S S22 AND (T()2 OR T2 OR SPIN???) |
| **S24** | 2 | S S13 NOT S11 |
| **S25** | 3 | S S16 NOT (S11 OR S13) |
| **S26** | 1 | S S23 NOT (S11 OR S13 OR S16) |
| **S27** | 21 | S S22 NOT (S11 OR S13 OR S16 OR S23) |